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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,791	12/03/2003	Thomas J. Bate	10253/15	6801
757	7590	09/20/2004	EXAMINER	
BRINKS HOFER GILSON & LIONE P.O. BOX 10395 CHICAGO, IL 60610			HU, HENRY S	
			ART UNIT	PAPER NUMBER
			1713	
DATE MAILED: 09/20/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,791	BATE, THOMAS J.	
	Examiner	Art Unit	
	Henry S. Hu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on election of July 23, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 16-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
- 7) ☒ Claim(s) 4-15 is/are objected to.
- 8) ☒ Claim(s) 1-50 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6-28-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. It is noted that the examiner has received an IDS filed on June 28, 2004 and an Oath & Declaration filed on May 7, 2004.

Applicant's election with traverse of Group I, Claims 1-15, filed on August 23, 2004 is acknowledged. The traversal is on the ground(s) that it would not place an undue burden to search and examine the non-elected Group II of Claims 16-31 and Group III of Claims of Claims 32-50 with those of Group I. This is not found persuasive because each of Group II and Group III is drawn to a technology apparently requiring search in different classification area. In the instant case Group I was drawn to a non-stick coating formulation comprising an acrylic polymer, an alcohol and a fluoropolymer, Group II was drawn to a non-stick coating comprising a fluoropolymer and an acrylic polymer cross-linked with an alcohol, while Group III was drawn to a process for making a non-stick coating comprising an acrylic polymer, an alcohol and a fluoropolymer on substrate.

As discussed earlier, the composition used in groups II and I may comprise an acrylic polymer, an alcohol and a fluoropolymer. However, they are producing quite different coating films in view of the molecular structure as well as the performance properties **due to the crosslinking limitation between acrylic polymer and alcohol.**

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The process of making in Group III is unique and thereby not interchangeable. It is known in the art that these two types of films from Groups I and II have different applications. Therefore, the scope of the claims, i.e., the metes and boundaries are distinct.

The requirement is still deemed proper and is therefore made **FINAL**. **Claims 1-50 are pending** now, while **Claims 16-50 are withdrawn from consideration by the examiner**.

Specification

2. The disclosure is objected to because of the following informalities:

(a) On **page 3** at lines 7-8, recitation of “ethylene propylene rubber” is wrong for EPDM rubber and should be changed to “**ethylene propylene diene rubber**” according to traditional wording in the art.

(b) On **page 6** at line 21 and **Page 7** at lines 22-23, two recitations such as “4.5% **propylene glycol**, 8.3% **propylene glycol**” are wrong by using the same compound.

(c) On **page 7** at line 19 and **Page 9** at line 7, two recitations of “~77°F” may look like “-77°F”. The examiner suggests using “about 77°F”.

Appropriate corrections for (a) and (b) are required.

Claim Objections

3. Claims 5-10 are objected to because of the following informalities:

(a) On **Claims 5-10**, sentences such as “the weight ratio of acrylic polymer to the alcohol” may be improper. It is noted that a diol or a polyol may be applied here; the **alcohol’s equivalent weight should be used**. Otherwise the weight ratio is meaningless. The examiner suggests using “the equivalent weight ratio of acrylic polymer to the alcohol”.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The limitation of parent **Claim 1** of the present invention relates to a **non-stick coating formulation** comprising: (a) an acrylic polymer, (b) an alcohol selected from the group consisting of a diol, a polyol, and mixtures thereof, and (c) a fluoropolymer; wherein the **ratio of acrylic polymer to the alcohol** is between about **90:10** and about **10:90** by weight. See other limitations of dependent **Claims 2-15**.

6. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Tannenbaum et al. (US 5,240,775 A).

Regarding the limitation of parent **Claim 1**, Tannenbaum et al. disclose a method for the production of an improved **non-stick coating system** which can be applied on untreated smooth substrate with a topcoat composition comprising a **PTFE polymer, a triol of triethanolamine and an acrylic terpolymer latex** (see Table 2 on column 4, line 57 – column 5, line 15; abstract, line 1-5). The weight % amount for each component is disclosed, where the ratio of acrylic terpolymer to the triethanolamine is found to be overlapping with the claimed number.

7. Regarding **Claim 3**, various types of fluoropolymers can be used, for instance, PTFE, PFA and the like (column 3, line 3-15; Table 2).

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8. Claims 1 and 3 are rejected under 35 U.S.C. 102(a) or 102(e) as being anticipated by Huesmann et al. (US 6,403,213 B1).

Regarding the limitation of parent Claim 1, **Huesmann** et al. disclose a method for the production of **a non-stick coating which can be applied on a substrate with a intermediate and/or top coating composition comprising a fluoropolymer, triethanolamine and an acrylic terpolymer** (see **Tables 7 and 8** on column 9, line 44 – column 10, line 20; column 3, line 18-21; column 4, line 45-47; column 5, line 9-38). The weight % amount for each component is disclosed, where the ratio of acrylic terpolymer to the triethanolamine is found to be overlapping with the claimed number.

9. Regarding **Claim 3**, various types of fluoropolymers can be used, for instance, PTFE, PFA and the like (column 4, line 45 – column 5, line 38; **Tables 7 and 8**).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tannenbaum et al. (US 5,240,775 A) or Huesmann et al. (US 6,403,213 B1), each individually in view of Bahadur et al. (US 6,242,058 B1).

The discussion of the disclosures of the prior art of Tannenbaum and Huesmann for Claims 1 and 3 of this office action is incorporated here by reference. Regarding **Claim 2**, Tannenbaum or Huesmann, each is silent about **further comprising a silane-related compound in the formulation**. Bahadur et al. teach that in the course of making a coating films, a silane-containing acrylic compound or a silicon-bonded hydrolyzable group-containing compound can be included in the composition (column 2, line 59 – column 3, line 28 ; column 14, line 3-25), the advantage by using organosiloxanes is to improve the non-stick coating film property.

In light of the fact that Tannenbaum, Huesmann and Bahadur are preparing the same or similar type of **non-sticky coating films**, one having ordinary skill in the art would therefore find it obvious to modify Tannenbaum or Huesmann's film composition preparation by adding a silane-containing acrylic compound or a silicon-bonded hydrolyzable group-containing compound as taught by Bahadur. By doing so, one would expect to obtain a better non-sticky coating film due to the existence of organosiloxanes. Additionally, the article or film product obtained from such a specific composition can be readily crosslinked to a network structure. Thereby a better non-sticky film with improved mechanical performance property can be obtained.

12. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tannenbaum et al. (US 5,240,775 A) or Huesmann et al. (US 6,403,213 B1), each individually.

The discussion of the disclosures of the prior art of Tannenbaum and Huesmann for Claims 1 and 3 of this office action is incorporated here by reference. Regarding **Claims 5-10**, the components used by Tannenbaum in Table 2 are only disclosed with one example for using a fluoropolymer (40.704 wt%), a triol alcohol (3.480 wt%) and an acrylic terpolymer (12.080 wt%), while the components used by Huesmann in Tables 7 and 8 are only disclosed with two examples for using a mixture of PTFE and PFA fluoropolymers (28.736 and 5.074 wt%), a triol alcohol (3.955 wt%) and an acrylic terpolymer (4.106 wt%). It is noted that the Applicants does not specify the alcohol

weight to be an equivalent weight. Please see the above-mentioned claim objections. It is also noted that Tannenbaum and Huesmann are preparing the same or similar type of non-sticky coating films.

13. However, Tannenbaum or Huesmann, each is silent about using the claimed ratio of acrylic polymer, alcohol and fluoropolymer in Claims 5-10. Since the criticality of the claimed ratios is not shown in the instant disclosure, it would have been obvious to one skilled in the art to find the optimum ratios via routine experimentation. Discovery of optimum value of result effective variable in known process is ordinarily within the skill in the art and would have been obvious. *In re Boesch and Slaney 205 USPQ 215 (CCPA 1980)*.

Allowable Subject Matter

14. **Claims 4 and 11-15** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to **Claims 4 and 11-12**, all above-mentioned prior art only disclose using triethanolamine to be coupled with a PTFE or PTFE-modified polymer, and an acrylic polymer. In a close examination, triethanolamine is only a triol having a amine

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moiety. Therefore, they fail to teach or fairly suggest using a **polyurethane diol** or a **polyester diol**.

With respect to **Claims 13-15**, all above-mentioned prior art even in combination only disclose using a silane-containing acrylic compound or a silicon-bonded hydrolyzable group-containing compound to be coupled with triethanolamine, a PTFE or PTFE-modified polymer, and an acrylic polymer. The silicon-bonded hydrolyzable group-containing polymer disclosed by Bahadur at column 14 at lines 3-25 is only a methoxysilyl-functional polymer. Therefore, they fail to teach or fairly suggest using a polyether modified dimethylpolysiloxane copolymer.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The following references relate to a **non-stick coating formulation** comprising: an acrylic polymer, an alcohol and a fluoropolymer:

USPG-PUB No. 2003/0144400 A1 to Osen et al. only discloses the preparation of an aqueous elastomer coating composition comprising (A) a polymer latex of **fluorine rubber**, mineral filler, (B) a crosslinking agent such as **bisphenol**, (C) water and (D) other conventional additives (abstract, line 1-25). The resultant film may be non-sticky

(paragraph 0047). However, Osen fails to teach or fairly suggest including an acrylic polymer (see working examples).

US Patent No. 5,721,053 to Thomas only discloses the preparation of a post-formable coated substrate coated with PTFE and PEP (abstract, line 1-3; column 2, line 65 – column 3, line 12). The adhesion of high melt viscosity fluoropolymer coating to the metal substrate is disclosed. However, the claimed composition to combine fluoropolymer with a diol or polyol along with an acrylic polymer is not taught or fairly suggested

16. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Henry S. Hu

September 10, 2004

TATYANA ZALUKAEVA
PRIMARY EXAMINER

